REMARKS

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) for anticipation by, or in the alternative, under 35 U.S.C. §103(a) for obviousness over Japanese Patent 408199235. Claims 3-5 are rejected under 35 U.S.C. §103(a) for obviousness over JP '235. Applicants respectfully traverse these rejections in view of amendments to claims 1 and 3 and for the following reasons.

The present invention is directed to a ferritic stainless steel with good workability achieved by controlling the Nb-containing precipitates. The Nb-containing precipitates are dissolved in a steel matrix via a finish annealing step that eliminates intraplane anisotropy and improves toughness. To accelerate the dissolution of the Nb-containing precipitates, the particle size and distribution rate of the precipitates during an aging step are controlled according to the formula of $\lambda=(T + 273)\cdot(20 + \log t)/1000$.

In one embodiment, the value for λ is 19-23 (amended claim 1); in the second embodiment, λ is 13-19 (amended claim 3). The effect of Nb-containing precipitates on workability and toughness is not taught or suggested by JP '235. Moreover, there is no suggestion on the relationship between the heating temperature (T) and the heating time (t) during precipitation heating. The claimed process conditions are not taught or suggested by JP '235.

In addition, the chemical composition of the stainless steel of the present invention contains nickel. Claims 1 and 3 also have been amended to include nickel in the amount of 0.07 to 0.6 mass %. (Claims 2 and 4 are amended for consistency with claims 1 and 3, respectively.) Support for the lower end of the range of nickel appears in Table 1. Support for the manufacturing conditions (the formula for λ) is set forth in the specification at pages 11-13. The values for λ from Examples 1-18 reported in Table 2 applicable to the first type stainless steel sheet fall within the claimed range of 19-23 as shown below:

Calculation of λ from manufacturing data in Table 2 of the application

No.	Heating of hot-rolled steel strips			Heating of cold-rolled steel strips		
	°C	hours	λ	°C	hours	λ
1	700	1	19.5	-	-	-
2	700	1	19.5	-	-	-
3	700	1	19.5	-	-	-
4	800	1	21.5	-	-	-
5	-	-	-	850	0.0028	19.6
6	-	-	-	700	10	20.4
7	-	-	-	700	10	20.4
8	700	0.0028	17.0	-	-	-
9	-	-	-	700	1	19.5
10	-	-	-	700	1	19.5
11	-	-	-	700	1	19.5
12	-	-	-	700	1	19.5
13	-	-	-	700	1	19.5
14	-	-	-	700	1	19.5
15	1040	0.0028	22.9	-	-	-
16	1040	0.0028	22.9	700	1	19.5
17	-	-	-	700	1	19.5
18	-	-	-	700	1	19.5

The values for λ for the manufacturing conditions of Examples 1-15 reported in Table 5 of the application fall within the claimed range of 13-19 for the second type stainless steel sheet as shown below:

Calculation of λ from manufacturing data in Table 5 of the application

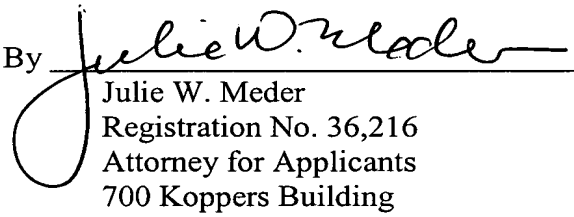
No.	Heating of hot-rolled steel strips			Heating of cold-rolled steel strips		
	°C	hours	λ	°C	hours	λ
1	700	0.0028	17.0	-	-	-
2	700	0.0028	17.0	-	-	-
3	700	0.0028	17.0	600	0.0028	-
4	600	0.0167	15.9	-	-	-
5	-	-	-	650	0.0028	16.1
6	-	-	-	500	10	16.2
7	-	-	-	600	0.0028	15.2
8	-	-	-	-	-	-
9	700	0.0028	17.0	-	-	-
10	-	-	-	600	0.0028	15.2
11	-	-	-	600	0.0028	15.2
12	-	-	-	600	0.0028	15.2
13	-	-	-	600	0.0028	15.2
14	-	-	-	600	0.0028	15.2
15	-	-	-	600	0.0028	15.2

Nowhere does JP '235 teach or suggest including nickel in the amounts required by amended claims 1 and 3 (0.07-0.6 mass %) or the claimed relationships between the heating temperature and heating time during precipitation heating. Accompanying this amendment is a partial translation of JP '235. These features of claims 1 and 3 are not taught or suggested as indicated by the translation of JP '235.

In view of the amendments to claims 1 and 3 and for the forgoing reasons, claims 1-5 define over the prior art of record and are believed to be in condition for allowance.

Respectfully submitted,

THE WEBB LAW FIRM

By 

Julie W. Meder
Registration No. 36,216
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219-1845
Telephone: 412-471-8815
Facsimile: 412-471-4094